

**REMARKS**

Reconsideration of the above-identified application in view of the foregoing amendments and following remarks is respectfully requested.

A. Status of the Claims and Explanation of Amendments

Claims 1 and 2 were pending.

By this paper, the specification and claim 1 are amended, claim 2 is canceled without prejudice or disclaimer, and new claims 3-10 are added. Claim 1 is amended to delete “means for generating” and “is changed according to a recording method of the image data,” and is amended to recite “an,” “unit which captures an image and generates,” “unit which generates,” “said inspection data generating unit adds first data and second data to the image data, the first data indicating” and “and the second data indicating a location of the image data. Support for these amendments may be found throughout the specification as originally filed, including for example on page 9, line 9, to page 10, line 18.

New claims 3, 6, 9 and 10 depend upon independent claim 1. Claim 3 recites the additional element “an image compression unit which compresses the image data before said inspection data generating unit generates the inspection data.” Claim 6 adds the element “wherein said inspection data generating unit generates second inspection data necessary to inspect whether additional data of the image data is modified or not.” Claim 9 recites the element “wherein said image pickup apparatus is one of a digital camera and an apparatus including a digital camera.” Claim 10 adds the element “wherein said image pickup apparatus is one of a scanner and a copying machine.” Support for these amendments may be found throughout the specification as originally filed, including for example on page 5, lines 15-20, and page 9, line 9, to page 11, line 25.

New claims 4 and 5 depend upon dependent claim 3. Claim 4 further recites “wherein said image compression unit compresses the image data in accordance with an image compression method conformed to JPEG or JPEG-2000.” Claim 5 recites “wherein said image compression unit compresses the image data in accordance with a lossless compression method.” Support for these amendments may be found throughout the specification as originally filed, including for example on page 6, lines 5-18, and page 9, lines 18-26, and page 16, lines 14-17.

New claims 7 and 8 depend upon dependent claim 6. Claim 7 recites “wherein said inspection data generating unit adds the additional data, third data and fourth data to the image data, the third data indicating a generation method of the second inspection data and the fourth data indicating a location of the additional data.” Claim 8 recites “wherein the additional data includes at least one of data indicating an identifier unique to said image pickup apparatus, data indicating an image quality of the image data, and data indicating a size of the image data.” Support for these amendments may be found throughout the specification as originally filed, including for example on page 16, line 18, to page 20, line 1.

No new matter is added to this application by entry of these amendments. Entry is respectfully requested.

The office action rejected claim 2 pursuant to 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent Application No. 2002/0060736 to Wakao et al. (“Wakao”). [02/12/2007 Office Action at p. 2-3]. The rejection of claim 2 is respectfully asserted to be moot in light of its cancellation.

Claim 1, however, was found to be novel over the prior art, but was rejected pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,764,286 to Kawamura et al. (“Kawamura”) in view of Marvel et al., “Compression-Compatible Fragile and

Semi-Fragile Tamper Detection,” Proceedings of SPIE, vol. 3971, pp. 131-139 (2000)

(“Marvel”). [02/12/2007 Office Action at pp. 3-5].

B. Claims 1 and 3-10 are Patentably Distinct from Kawamura in view of Marvel

The rejection of claim 1 is respectfully traversed. As explained more fully below, the requirements for such a rejection are not met, because neither of the two cited references discloses “an inspection data generating unit” as recited in Applicant’s claim 1.

Specifically, Applicant’s claim 1 recites:

“1. An image pickup apparatus comprising:

an image pickup unit which captures an image and  
generates image data representing a captured image;  
and

an inspection data generating unit which generates  
inspection data necessary to inspect whether the  
image data is modified or not,

wherein said inspection data generating unit adds  
first data and second data to the image data, the first  
data indicating a generation method of the  
inspection data and the second data indicating a  
location of the image data.”

The office action concedes that the primary reference, “Kawamura[] does not expressly disclose that the recording means also functions as an inspection data generating means.” [02/12/2007 Office Action at p. 4]. For at least similar reasons and after Applicant’s own review of Kawamura, Applicant asserts that Kawamura fails to teach, disclose or suggest the “inspection data generating unit” as recited in Applicant’s claim 1.

However, the office action relies upon Marvel to attempt to remedy this admitted deficiency. [02/12/2007 Office Action at p.4].

Marvel is directed to “tamper-detection techniques” which purport to allow a user to detect changes in a marked image. [Marvel, at Abstract]. In particular, Marvel states that either a “fragile tamper-detection” or a “semi-fragile tamper detection” scheme may be used to embedded a mark (i.e., data) into a digital image. [Marvel, at Introduction]. Under the Marvel “fragile tamper-detection” scheme, “if [an] image undergoes even the most subtle change, the [mark] is altered.” [Marvel, at p. 131, ¶3]. When the mark has been altered, a tamper alert will issue notifying the user that the integrity of the digital image has been compromised. [Marvel, at p. 131, ¶¶1 & 2]. Under the Marvel “semi-fragile tamper detection” scheme, the user is notified only of “significant alterations of the marked image.” [Marvel, at p. 133, ¶8].

The office action specifically asserts that Marvel discloses “using different method for generating different inspection data according to the recording method.” [02/12/2007 Office Action at p.4]. To support its assertion, the office action cites pages 133, ¶4, and 134, ¶¶2 & 3. These pages are portions of the paper written by Marvel et al, and read as follows:

“As an example, suppose that we desire to embed a fragile tamper-detection mark within a  $512 \times 512$  image. (For simplicity, we will use the MD-5 hashing function in place of the MAC ignoring the use of a key.) This image contains  $4096 \ 8 \times 8$  pixels blocks. Of these  $N = 4096$  blocks. we [sic] randomly select  $H = 128$  blocks to embed the 128-bit MD-5 cryptographic hash that was constructed from the pixel values of the remaining  $N - H = 3968$  blocks.”

[Marvel, at p. 133, ¶4]

\* \* \*

“We propose a semi-fragile tamper-detection scheme using an information hiding system, called Spread Spectrum Image Steganography (SSIS), that uses spread spectrum techniques along with error control coding. SSIS uses error control coding to encode the marking information and then

employs spread spectrum techniques to construct the marked image. By selecting the appropriate embedded signal power and error control code, the hidden information is recoverable even if the image has been compressed via low levels of image compression (e.g., JPEG) or exposed to additive channel noise.”

“We use this hiding method to create the marked image, by embedding a a [sic] low-resolution version of the original image within. Our semi-fragile tamper-detection scheme is depicted in Figure 1 with the primary function of the system reflected in the following equations. Consider  $n$  original  $N \times N$  image,  $I$ , where the thumbnail,  $T = \{t(j) : j = 0, 1, \dots, M\}$  with  $M = (N/2^n)^2$  (assuming that  $N$  is a power of 2), contains the lowest order coefficients of an  $n$ -level wavelet decomposition,  $W$ ,  $T = W(I, n)$ . The user must select  $n$  to ensure that all important image features, those for which tamper diction is desired, are visible within the thumbnail. A secondary consideration in the selection of the variable  $n$  is the payload capacity of the original image.”

[Marvel, at p. 134, ¶¶2 & 3].

At best, these passages disclose that tamper-detection schemes (fragile or semi-fragile) may be implemented by hiding (embedding) certain data within a digital image. Marvel states that there is a scheme (or method) to embed the data into a digital image (Stego-JPEG) and a scheme to generate the data to be embedded or hidden (e.g., the HMAC scheme). [Marvel, at p. 133, ¶¶3 & 4]. However, Marvel does not mention that the hidden data describes, or identifies in any way, the generation method used to create the hidden data; rather, it is assumed that the generation method is either the HMAC scheme or another scheme adopted by the user. [See Marvel, at p. 133, ¶¶3 & 4]. Additionally, because Marvel’s discussion of the tamper-detection schemes states that the hidden (or embedded) data is located by running a hash function on the digital image, the hidden data does not directly identify the location of the embedded data. [See Marvel, at p. 133, ¶5]. Thus, Marvel does not mention an “inspection data generating unit [that]

adds **first data** and **second data** to the image data, the first data **indicating a generation method** of the inspection data and the second data **indicating a location** of the image data.”

Therefore, Marvel does not teach, disclose or suggest the “inspection data generating unit” as recited in Applicant’s claim 1.

Accordingly, as Applicant cannot find “the inspection generating unit” of Applicant’s claim 1 in Kawamura or Marvel (taken singly or in combination), at least independent claim 1 and its dependent claims 3-10 are respectfully asserted to be in condition for allowance.

Applicant has chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Likewise, Applicant has chosen not to swear behind the documents cited by the office action or to otherwise submit evidence to traverse the rejection at this time. Applicant, however, reserves the right, as provided by 37 C.F.R. §§ 1.131 and 1.132, to do so in the future as appropriate. Finally, Applicant has not specifically addressed the rejections of the dependent claims. Applicant respectfully submits that the independent claims, from which they depend, are in condition for allowance as set forth above. Accordingly, the dependent claims also are in condition for allowance. Applicant, however, reserves the right to address such rejections of the dependent claims in the future as appropriate.

Appl. No. 10/669,289  
Paper dated May 11, 2007  
Reply to Office Action dated February 12, 2007

**CONCLUSION**

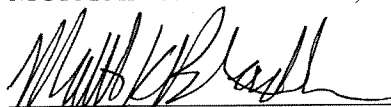
For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is requested. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 1232-5162.

Respectfully submitted,  
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